

## AMENDMENTS TO THE CLAIMS

1. (Original) A method of determining  $E\log D_{Oct}$  for chemical compounds which comprises:

- a. Introducing said chemical compounds serially to the column of a reverse phase high performance liquid chromatographic system said column being an embedded amide functional group column; or a C-18 bonded column with low silanol activity; and
- b. Eluting said compounds with a mobile phase containing MOPS buffer and a methanol/octanol mixture in which the proportions of said methanol/octanol mixture to said buffer are from 75 to 15% v/v; and with flow rates between 0.5 and 3 ml/min and
- c. Measuring the retention time required to elute each sample from said column; and
- d. Calculating  $E\log D_{Oct}$  from the retention time of each sample using equation 1:  $\log D_{Oct} = 1.1267 (\pm 0.0233) \log k'_w + 0.2075 (\pm 0.0430)$  (Eq. 1).

2. (Original) The method of claim 1 wherein said compounds for which  $E\log D_{Oct}$  is to be determined are divided into groups according to calculated lipophilicity based on chemical structure and;  $E\log D_{Oct}$  is determined for all samples in a first group and; said column is equilibrated to the conditions for a second group.

3. (Original) The method of claim 1 wherein each of steps a) through d) is performed by robotic means under the control of a programmed computer.

4. (Original) The method of claim 1 wherein said column is an embedded amide functional group column.

5. (Original) The method of claim 1 wherein said column is a C-18 bonded column with low silanol activity.

6. (Original) The method of claim 1 wherein the buffer pH is between 4 and 8.

7. (Previously submitted) The method of Claim 1 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.

8. (Previously submitted) The method of Claim 4 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.

9. (Previously submitted) The method of Claim 5 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.